

**DRAFT ECONOMIC ANALYSIS  
OF  
CRITICAL HABITAT DESIGNATION  
FOR THE ALAMEDA WHIPSNAKE**

Division of Economics  
U.S. Fish and Wildlife Service  
4401 N. Fairfax Drive  
Arlington, VA 22203

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Prepared by:

Robert Unsworth and Sarah Malloy  
Industrial Economics, Incorporated  
2067 Massachusetts Avenue  
Cambridge, Massachusetts 02140

Send comments on the economic analysis to:

Field Supervisor  
U.S. Fish and Wildlife Service  
Sacramento Fish and Wildlife Office  
2800 Cottage Way  
Suite W-2605  
Sacramento, CA 95825-1846

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## **PREFACE**

This report was prepared for the U.S. Fish and Wildlife Service (FWS) by Industrial Economics, Incorporated (IEc) to assess the economic impacts that may result from designation of critical habitat for the Alameda whipsnake. IEc worked closely with FWS personnel to ensure that both current and future land uses were appropriately identified and to assess whether or not the designation of critical habitat would have any net economic effect in the regions containing the proposed critical habitat designations. To better understand the concerns of stakeholders, IEc solicited FWS opinion regarding what public comments might likely be, in the absence of a comment period. IEc also requested input from FWS officials concerning whether or not any of these projects would likely result in an adverse modification determination without an accompanying jeopardy opinion. It is important to note here that it would not have been appropriate for IEc to make such policy determinations. Identification of these land management/use actions provided IEc with a basis for evaluating the incremental economic impacts due to critical habitat designation for the whipsnake.

**EXECUTIVE SUMMARY**

The purpose of this report is to identify and analyze the potential economic impacts that would result from the proposed critical habitat designation for the Alameda whipsnake (whipsnake).<sup>1</sup> This report was initially prepared by Industrial Economics, Incorporated (IEc), under contract to the U.S. Fish and Wildlife Service's Division of Economics.

The whipsnake was initially added to the list of threatened species by the U.S. Fish and Wildlife Service (FWS) on December 5, 1997.<sup>2</sup> On March 8, 2000 FWS proposed designation of critical habitat for the whipsnake.<sup>3</sup> Section 4(b)(2) of the Endangered Species Act (ESA) requires FWS to base critical habitat proposals upon the best scientific and commercial data available, after taking into consideration the economic impact, and any other relevant impact, of specifying any particular area as critical habitat. FWS may exclude areas from critical habitat designation when the benefits of exclusion outweigh the benefits of including the areas within critical habitat, provided the exclusion will not result in extinction of the species.

FWS has proposed seven units of critical habitat for the whipsnake in the East Bay region of northern California. The proposed units form an interconnected system of 406,708 acres of suitable habitat for the species. Any existing structures within the critical habitat area, such as roads and buildings, which do not contain the constituent elements necessary to support this species, are not considered critical habitat. Exhibit ES-1 displays how the 406,708 acres of critical habitat for the whipsnake are distributed across Federal, state, and local land management agencies, and private landholders.

This analysis defines an impact of critical habitat designation to include any effect critical habitat designation has above and beyond the impacts associated with the listing of the whipsnake. Section 9 of the ESA makes it illegal for any person to "take" a listed species, which is defined by the Act to mean harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or the attempt to engage in any such conduct.<sup>4</sup> To evaluate the *increment* of economic impacts attributable to critical habitat designation for the whipsnake, this analysis compares a "without critical habitat" baseline to a "with critical habitat" scenario. The difference between the two is a measurement of

<b>Exhibit ES-1</b>		
<b>PROPOSED CRITICAL HABITAT ACREAGE BY MANAGER, HOLDER, OR OWNER</b>		
<b>Manager, Holder, or Owner of Proposed Critical Habitat</b>	<b>Total Acres</b>	<b>Percentage of Total</b>
Federal Government	1,805	0.4 %
Local or State Government	155,981	38.4 %
Private Entity	248,922	61.2 %
<b>TOTAL</b>	<b>406,708</b>	<b>100.0 %</b>
Source: <i>Proposed Determination of Critical Habitat for the Alameda Whipsnake</i> , March 8, 2000 (65 <u>FR</u> 12155)		

<sup>1</sup> *Masticophis lateralis euryxanthus*.

<sup>2</sup> 62 FR 64306.

<sup>3</sup> 65 FR 12155.

<sup>4</sup> 15 U.S.C. 1531 et seq.

the net change in economic activity that may result from the designation of critical habitat for the whipsnake.

The "without critical habitat" baseline represents current and expected economic activity under all required modifications that existed prior to critical habitat designation.<sup>5</sup> These include the take restrictions that result from the ESA listing as well as other Federal, state, and local requirements that may limit economic activities in the regions containing the proposed critical habitat units. For example, the U.S. Army Corp of Engineers will still need to consult with FWS on wetland development projects that may jeopardize the existence of a listed species, regardless of the critical habitat status of the parcel. While there may be both current and future impacts attributable to the listing of the whipsnake, such impacts are not the subject of this analysis.

To estimate the incremental effect that critical habitat designation would have on existing and planned activities, this analysis used the following approach:

We first collected information on current and planned land uses in proposed critical habitat areas for the whipsnake;

We then identified whether a Federal nexus to these activities exists; and

Finally, we requested FWS opinion on: (1) whether each identified land use might be subject to modifications required by the ESA listing for the whipsnake; and (2) whether additional modifications might be required under the critical habitat designation.<sup>6</sup>

FWS staff in Sacramento, CA and Washington, DC discussed potential land management/use actions and determined that, for the whipsnake critical habitat designation, there is no action that would result in an adverse modification determination without an accompanying jeopardy opinion. In other words, critical habitat designation for the whipsnake is expected to result in no further modifications to proposed and existing activities *above and beyond modifications that would be implemented due to the ESA listing* of the whipsnake.

Although FWS does not expect that critical habitat designation will result in any further project modifications beyond those required by the listing of the whipsnake, FWS acknowledge that government and private landowners may nonetheless incur *direct* costs resulting from critical habitat designation above and beyond those attributable to the listing of the whipsnake as a threatened species. These direct costs include: (1) the cost associated with conducting additional Section 7 consultations; and (2) delays in implementing public and private development activities, which may result in losses to individuals and society.

In general FWS has recognized that there are approximately three different scenarios associated with the designation of critical habitat that could trigger additional consultation costs: (1) some consultations that have already been "completed" may need to be reinitiated to address critical habitat; (2) consultations taking place after critical habitat designation may take longer because critical habitat issues will need to be addressed; and (3) critical habitat designation may result in some new consultations taking place that otherwise would not had critical habitat

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<sup>5</sup> In addition to Section 7 jeopardy rulings, listing a species may result in economic impacts attributable to Section 9 provisions regarding illegal take and to Section 4(d) protective regulations.

<sup>6</sup> To assess the incremental economic impacts of critical habitat designation for the whipsnake, IEc required policy direction from FWS on what potential project modifications would be imposed as a result of critical habitat designation over and above those associated with the listing. It is important to note here that it would not be appropriate for IEc to make such a policy determination. IEc requested that FWS consider what land management/use within the proposed critical habitat designation for the whipsnake might result in a determination of adverse modification (critical habitat effects) without an accompanying jeopardy opinion (listing effects). Identifying these land management/use actions provides IEc with a basis for evaluating the incremental economic impacts due to critical habitat designation for the whipsnake.

not been designated. Exhibit ES-2 summarizes the potential direct impacts of critical habitat designation specifically for the whipsnake on Federal, state, and local government and private entity land uses and activities. These costs and their applicability to the critical habitat designation for the whipsnake are explored in greater detail in Section 4.

In addition, this analysis evaluates the possibility of *indirect* economic impacts due to the critical habitat designation. Specifically, the analysis considers whether the public's uncertainty about particular parcels being subject to the designation, and the perception that project modifications result from the critical habitat designation, could in turn lead to real reductions in property values and increased costs to landowners. While not resulting from specific actions taken to conduct consultations, these are nevertheless real economic effects of critical habitat designation. They can occur even in cases in which additional project modifications on land uses within critical habitat are unlikely to be imposed. These costs are explained in further detail in Section 5.

<b>Exhibit ES-2</b>						
<b>SUMMARY OF IMPACTS UNDER THE PROPOSED CRITICAL HABITAT DESIGNATION FOR THE ALAMEDA WHIPSNAKE</b>						
<b>Manager, Holder, or Owner of Land</b>	<b>Description of Current and Planned Land Uses or Activities That May Impact Suitable or Occupied Habitat</b>	<b>Critical Habitat Unit(s) Potentially Affected</b>	<b>Possible Federal Nexus</b>	<b>Possible Modifications Under the ESA Listing?*</b>	<b>Additional Modifications Under Critical Habitat Designation?*</b>	<b>Estimated Impacts From Critical Habitat Designation Only?</b>
<b>U.S. Dept. of the Interior, Bureau of Land Management</b>	None	4	Potential habitat destruction	Possibly	No	None
<b>U.S. Dept. of Energy, Lawrence Livermore National Laboratory</b>	Munitions testing	5	Potential habitat destruction	Possibly	No	None
<b>State and Local Parks and Utilities</b>	Fire management, recreation	All	FEMA funding, HCP, Section 404 permit	Possibly	No	Potential additional consultations; project delays
<b>Private</b>	Current and planned real estate development	At least 2	Section 404 permit, NPDES	Possibly	No	Potential additional consultations; project delays
	Farming	Unclear	Undetermined-possible federal farm subsidies or insurance	Possibly	No	Potential additional consultations; project delays
* Possible modifications are based on guidance from FWS staff in Sacramento, CA office.						
Sources: (1) Public comments received in response to the proposed critical habitat designation; (2) interviews of staff at Federal, state, and local land management agencies, as well as private landowners.						

In addition, the designation of critical habitat may also result in economic benefits. Resource preservation or enhancement that is aided by designation of critical habitat may constitute an increase in non-recreational values

provided directly by the species and indirectly by its habitat. Categories of potential benefits for the whipsnake include enhancement of scenic beauty, biodiversity, ecosystem, and intrinsic (passive use) values.<sup>7</sup>

The proposed critical habitat designation for the whipsnake does not encompass any Native American land. Because FWS does not believe that critical habitat designation will not lead to any further project modifications than that required by the listing of the whipsnake, small businesses and communities should experience only effects associated with additional Section 7 consultations and losses resulting from delays in project implementation. In addition, small businesses and communities within the whipsnake critical habitat area may incur indirect costs and property value losses associated with (1) mitigating uncertainty about whether their property constitutes critical habitat; and (2) the perception of additional project modifications from critical habitat designation. However, these costs are not expected to have a significant impact on a substantial number of small entities.

At the time that this report was finalized, FWS had received few written comments from land owners and managers on the effects of the proposed critical habitat designation on their properties. As a result, IEC obtained information about current and proposed land uses through telephone conversations with land owners and managers whom FWS believed would be affected. As of the date that this draft report was finalized, the public comment period for whipsnake critical habitat designation was still open. Furthermore, FWS was in the process of extending the comment period and scheduling a public hearing on the proposed designation. As a result, it is possible that some comments submitted within the comment period were not explicitly considered in this draft report, in which case they will be addressed in the final version.

## **INTRODUCTION**

## **SECTION 1**

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The U.S. Department of the Interior's Fish and Wildlife Service (FWS) published a proposed rule to list the Alameda whipsnake (referred to as the "whipsnake" throughout this report) as endangered on February 4, 1994, under provisions of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 et seq.) Following a review of information and public comments received on the rule, FWS elected to list the whipsnake as a threatened species on December 5, 1997 (62 FR 64306).

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<sup>7</sup> Intrinsic values, also referred to as passive use values, include categories of economic benefits such as existence value, i.e., knowledge of continued existence of a resource or species; and bequest value, i.e., preserving the resource or species for future generations.



On March 4, 1999, the Southwest Center for Biological Diversity, the Center for Biological Diversity, and Christians Caring for Creation filed a lawsuit in the Northern District of California against the U.S. Fish and Wildlife Service and the Secretary of the Department of the Interior for failure to designate critical habitat for seven species: the Alameda whipsnake (*Masticophis lateralis euryxanthus*), the Zayante band-winged grasshopper (*Trimerotropis infantilis*), the Morro shoulderband snail (*Helminthoglypta walkeriana*), the Arroyo southwestern toad (*Bufo microscaphus californicus*), the San Bernardino kangaroo rat (*Dipodomys merriami parvus*), the spectacled eider (*Somateria fischeri*), and the Steller's eider (*Polysticta stelleri*). On November 5, 1999, William Alsup, U.S. District Judge, dismissed the plaintiffs' lawsuit pursuant to a settlement agreement entered into by the parties. In response to the terms of that settlement, FWS proposed designation of critical habitat for the whipsnake on March 8, 2000 (65 FR 12155).

Critical habitat designation can help focus conservation activities for a listed species by identifying areas, both "occupied" and "unoccupied", that contain or could develop essential critical habitat features. FWS defines occupied critical habitat as areas that contain the physical or biological features that are essential to the conservation of the species and that may require special management considerations or protection. By contrast, FWS defines unoccupied critical habitat as those areas that fall outside the geographical area occupied by the species, but that may meet the definition of critical habitat upon determination that they are essential for the conservation of the species. Unoccupied lands proposed as critical habitat frequently include areas inhabited by the species at some point in the past.

Critical habitat designation contributes to Federal land management agencies' and the public's awareness of the importance of these areas. However, the designation of critical habitat has no effect on private actions on private lands unless a Federal connection (or "nexus") to a land use or management action exists, such as funding, permit authorization, or other Federal actions. In addition to its informational role, the designation of critical habitat may provide protection where significant threats to the species have been identified. This protection derives from ESA Section 7, which requires Federal agencies to ensure that activities they fund, authorize, or carry out are not likely to jeopardize the continued existence of listed species or result in destruction or adverse modification of critical habitat.

### **Consultation Under Section 7 of the Endangered Species Act**

The designation of critical habitat directly affects only Federal agencies. Section 7 (a) of the Act requires Federal agencies to ensure that actions they fund, authorize, or carry out do not destroy or adversely modify critical habitat to the extent that the action appreciably diminishes the value of the critical habitat for the survival and recovery of the species. Individuals, organizations, States, local and tribal governments, and other non-Federal entities are only affected by the designation of critical habitat if their actions occur on Federal lands, require a Federal permit, license, or other authorization, or involve Federal funding. Thus, activities on Federal lands that may affect the whipsnake or its critical habitat, if designated, will require section 7 consultation. Actions on private or State lands receiving funding or requiring a permit from a Federal agency also will be subject to the section 7 consultation process if the action may affect critical habitat. Federal actions not affecting the species or its critical habitat, as well as actions on non-Federal lands that are not federally funded or permitted, will not require section 7 consultation.

Federal agencies are required to evaluate their actions with respect to any species that is proposed or listed as endangered or threatened and with respect to its proposed or designated critical habitat. Regulations implementing the interagency cooperation provisions of the Act are codified at 50 CFR part 402. Section 7(a)(4) of the Act and regulations at 50 CFR 402.10 require Federal agencies to confer with FWS on any action that is likely to jeopardize the continued existence of a proposed species or to result in destruction or adverse modification of proposed critical habitat. The ESA implementing regulations define jeopardy as any action that would appreciably reduce the likelihood of both the survival and recovery of the species. Adverse modification of critical habitat is defined as any direct or indirect alteration that appreciably diminishes the value of critical habitat for both the survival and recovery of the species. Determination of whether an activity will result in jeopardy to a species or adverse modification of its critical habitat is dependent on a number of variables, including type of project, size, location, and duration.

The conference is designed to assist the Federal agency and any applicant in identifying and resolving potential conflicts at an early stage in the planning process. A conference between a Federal agency and FWS may consist of informal discussions concerning an action that is likely to jeopardize the continued existence of the species or result in the destruction or adverse modification of critical habitat. During the informal conference, FWS makes advisory recommendations, if any, on ways to minimize or avoid adverse effects. If agreement can be reached, FWS will concur in writing that the action, as revised, is not likely to adversely affect listed species or critical habitat.

A formal consultation is required if the action agency can not find, with FWS written concurrence, that the proposed action may affect, but is not likely to adversely affect listed species or critical habitat. Formal consultations determine whether a proposed agency action is likely to jeopardize the continued existence of a listed species or destroy or adversely modify critical habitat. If FWS finds, in their biological opinion, that a proposed agency action is likely to jeopardize the continued existence of a listed species and/or destroy or adversely modify the critical habitat, FWS may identify reasonable and prudent alternatives that are designed to avoid such adverse effects to the listed species or critical habitat.

Reasonable and prudent alternatives are defined at 50 CFR 402.2 as alternative actions that can be implemented in a manner consistent with the intended purpose of the action, that are consistent with the scope of the Federal agency's legal authority and jurisdiction, that are economically and technologically feasible, and that FWS believe would avoid destruction or adverse modification of critical habitat. Reasonable and prudent alternatives can vary from slight project modifications to extensive redesign or relocation of the project.

Costs associated with implementing a reasonable and prudent alternative vary accordingly. FWS believes, however, that such costs would normally be associated with the listing of the whipsnake, as it is unlikely that on occupied lands FWS would conclude that an action would destroy or adversely modify critical habitat without also jeopardizing the continued existence of a listed species. Thus, impacts attributable solely to critical habitat designation would result only when an activity adversely modifies critical habitat of the whipsnake but does not jeopardize the whipsnake. As suggested above, this likely would occur on unoccupied land.

### **Purpose and Approach of Report**

Under Section 4(b)(2) of the ESA, the Secretary of the Interior is required to designate critical habitat on the basis of the best scientific and commercial data available and to consider the economic and other relevant impacts of designating a particular area as critical habitat. The Secretary may exclude areas from critical habitat upon a determination that the benefits of such exclusions outweigh the benefits of specifying such areas as critical habitat.

The purpose of this report is to identify and analyze the potential economic impacts that would result from the proposed critical habitat designation for the whipsnake. The analysis was conducted by assessing how critical habitat designation for the whipsnake may affect current and planned land uses and activities on Federal and other government-held land as well as privately-held land. For Federally-managed land, designation of critical habitat may modify land uses, activities, and other actions that threaten to adversely modify habitat. For land held or managed by other governments or private entities subject to critical habitat designation, modifications on land uses and activities can only be imposed when a "Federal nexus" exists (i.e., the activities or land uses of concern involve Federal permits, Federal funding, or other Federal actions). Activities on non-Federal governmental and private land that do not involve a Federal nexus are not restricted by critical habitat designation.

In addition to determining whether a Federal nexus exists, the analysis must distinguish between economic impacts caused by the ESA listing of the whipsnake and those additional effects that would be caused by the proposed critical habitat designation. *The analysis only evaluates economic impacts resulting from additional modifications under the proposed critical habitat designation that are above and beyond impacts caused by existing modifications under the ESA listing of the whipsnake.* Finally, in the event that a land use or activity would be limited or prohibited by another existing statute, regulation, or policy, the economic impacts associated with those limitations or prohibitions would not be attributable to critical habitat designation.

To evaluate the increment of economic impacts attributable to the designation of critical habitat, above and beyond the ESA listing, the analysis assumes a "without critical habitat" baseline and compares it to a "with critical habitat" scenario, measuring the net change in economic activity. The "without critical habitat" baseline represents current and expected economic activity under all existing modifications prior to the designation of critical habitat. Only those actions that may be affected by modifications and costs due to critical habitat designation, above and beyond existing modifications, are considered in this economic analysis. Moreover, actions must be "reasonably foreseeable," defined as activities which are currently authorized, permitted, or funded, or for which proposed plans are currently available to the public.

## **Structure of Report**

The remainder of this report is organized as follows:

**Section 2: Description of Species and Proposed Critical Habitat Areas** - Provides general information on the species and a brief description of proposed critical habitat areas.

**Section 3: Framework for Analysis** - Describes the framework and methodology for the economic analysis; highlights sources of information for the report.

**Section 4: Impacts of Critical Habitat Designation on Land Use: Federal, State, and Local Government and Private Land** - Identifies and assesses potential economic and other relevant impacts from the proposed critical habitat designation.

**Section 5: Impacts Due to Uncertainty and Public Perception** - Assesses the impacts that may result from public perception that critical habitat designation will impose additional modifications above and beyond those existing modifications under the ESA listing.

**Section 6: Social and Community Impacts** - Identifies impacts to small entities and communities located within the proposed critical habitat.

**Appendix A: Maps of Critical Habitat Areas:** - Provides maps of the proposed critical habitat units.

**DESCRIPTION OF SPECIES AND  
PROPOSED CRITICAL HABITAT AREAS<sup>1</sup>**

**SECTION 2**

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The Alameda whipsnake (*Masticophis lateralis euryxanthus*), also known as the Alameda striped racer, is sooty black in color with distinct yellow-orange stripes running down the length of its body on each side. The snake can reach a length of three to four feet. It feeds primarily on lizards, but may also hunt rattlesnakes, small mammals, and birds. The snake is slender and fast-moving, with a broad head, large eyes, and slender neck. It is diurnal and relatively shy. The Alameda whipsnake is one of two subspecies of the California whipsnake (the other species is the chaparral whipsnake). The Alameda whipsnake currently is distributed in the inner Coast Range in western and central Contra Costa and Alameda counties in California.

The Alameda whipsnake's habitat coincides closely with chaparral and other scrub communities. Key habitat features include small mammal burrows, rock outcrops, and other forms of cover to provide for temperature regulation, shelter from predators, egg laying sites, and areas for hibernation. Habitat also must support the whipsnake's various prey species and adequate insect populations to sustain prey populations. In addition, whipsnakes venture into adjacent habitats, such as grassland, oak savanna, and oak-bay woodland, for periods ranging from a few hours to several weeks at a time.

**Geographical Background on Proposed Critical Habitat Units**

FWS has proposed seven units in the East Bay region of northern California as critical habitat for the Alameda whipsnake. The proposed critical habitat units are designed to form an interconnected system of suitable and potential habitat for the species. All units proposed for critical habitat designation for the whipsnake are within geographical areas presently believed to be occupied by the species, and are in current need of special management considerations or protection, as required under Section 3 of the ESA. Any existing significant structures within the critical habitat area, such as roads and buildings, which do not contain the constituent elements necessary to support this species, are not considered to be critical habitat.

Exhibit 2-1 displays all seven units proposed as critical habitat designation for the whipsnake; more detailed maps of each unit are provided in Appendix A. The dotted lines show the historical range of the whipsnake, whereas the solid-outline shapes indicate the seven critical habitat units. As shown, the seven units extend in the south from Wauhab Ridge, Del Valle area to Cedar Mountain Ridge in Santa Clara county; north to Contra Costa county, west to the inner Coastal Range, and east to the easternmost extent of suitable habitat. The units form a corridor allowing for dispersal movement of the whipsnake. The proposed seven units follow geographical boundaries where possible. Ranging from 4,145 acres to 171,328 acres per unit, all seven units of critical habitat together comprise 406,708 acres. Major landowners in these areas include:

U. S. Department of Interior  
- Bureau of Land Management

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<sup>1</sup> The information on the Alameda whipsnake and its habitat included in this section was obtained from the *Proposed Determination of Critical Habitat for the Alameda Whipsnake*, March 8, 2000 (65 FR 12155).

U.S. Department of Energy  
- Lawrence Livermore National Laboratory Site 300

California Department of Parks and Recreation

East Bay Regional Park District

East Bay Municipal Utilities District

Contra Costa Water District

San Francisco Water District

Private Owners, including non-profit organizations

Exhibit 2-2 shows the acreage associated with Federal, state and local, and private ownership.

#### **Unit 1: Tilden-Briones Unit**

Unit 1 represents primary breeding, feeding, and sheltering habitat for the whipsnake. It encompasses approximately 39,815 acres and represents the most northwestern unit of the five Alameda whipsnake metapopulations. Most of this unit lies within Contra Costa County; only the southwestern tip lies within in Alameda County. This unit is bordered to the north by State Highway 4 and the cities of Pinole, Hercules, and Martinez; to the south by State Highway 24 and the City of

#### **Exhibit 2-1**

**Exhibit 2-2**

**PROPOSED CRITICAL HABITAT ACREAGE BY MANAGER, HOLDER, OR OWNER**

<b>Manager, Holder, or Owner of Proposed Critical Habitat</b>	<b>Total Acres</b>	<b>Percentage of Total</b>
Federal Government	1,805	0.4 %
Local or State Government	155,981	38.4 %

Draft -May 26, 2000

Private Entity	248,922	61.2 %
<b>TOTAL</b>	<b>406,708</b>	<b>100.0 %</b>
Source: <i>Proposed Determination of Critical Habitat for the Alameda Whipsnake</i> , March 8, 2000 (65 FR 12155)		

Orinda Village; to the west by Interstate 80 and the cities of Berkeley, El Cerrito, and Richmond; and to the east by Interstate 680 and the City of Pleasant Hill. A substantial amount of public land exists within this unit, including East Bay Regional Park District's Tilden, Wildcat, and Briones Regional Parks and East Bay Municipal Utilities District watershed lands.

### **Unit 2: Oakland-Las Trampas Unit**

Unit 2 encompasses approximately 54,170 acres within the Oakland-Las Trampas unit, lying south of the Tilden-Briones unit and north of the Hayward-Pleasanton Ridge unit. The unit represents primary breeding, feeding, and sheltering habitat for the Alameda whipsnake. Equal portions of this unit lie in each of Alameda and Contra Costa counties. This unit is bordered in the north by State Highway 24 and the cities of Orinda, Moraga, and Lafayette; in the south by Interstate Highway 580 and the city of Castro Valley; in the west by State Highway 13 and Interstate Highway 580 and the cities of Oakland and San Leandro; and in the east by Interstate Highway 680 and the cities of Danville, San Ramon, and Dublin. The Oakland-Las Trampas unit features substantial public landholdings, including East Bay Regional Park District's Redwood and Anthony Chabot Regional Parks, Las Trampas Regional Wilderness, and additional East Bay Municipal Utilities District watershed lands.

### **Unit 3: Hayward-Pleasanton Ridge Unit**

Unit 3 encompasses approximately 32,011 acres within the Hayward-Pleasanton Ridge unit. The parcel lies south of the Oakland-Las Trampas unit and northwest of the Sunol-Cedar Mountain unit, and represents primary breeding, feeding, and sheltering habitat for the Alameda whipsnake. This unit lies solely within Alameda County. Unit 3 borders on Interstate Highway 580 to the north; Niles Canyon Road (State Highway 84) to the south; the cities of Hayward and Union City to the west; and Interstate Highway 680 and the city of Pleasanton to the east. This unit is bisected by Palomares Canyon Road, which runs from Interstate Highway 580 to Niles Canyon Road. Accounting for more than 30 percent of the acreage within Unit 3, public landholdings include Garin, Dry Creek, and Pleasanton Ridge Regional Parks as well as other East Bay Regional Park District holdings. The privately-owned Pleasanton Ridge Conservation Bank lies in the northeastern section of this unit.

### **Unit 4: Mount Diablo-Black Hills Unit**

Unit 4 is comprised of approximately 99,794 acres within the Mount Diablo-Black Hills unit, and represents the most northwesterly parcel in the whipsnake's historical range. The area completely encompasses Mount Diablo State Park and surrounding lands, and represents primary Alameda whipsnake breeding, feeding, and sheltering habitat. Most of Unit 4's acreage lies in Contra Costa county; only the southern tip of the parcel dips into Alameda County. This unit is surrounded by State Highway 4 and the cities of Clayton, Pittsburg, and Antioch to the north; open grassland within Tassajara Valley just below the Alameda/Contra Costa county line to the south; the cities of Concord, Walnut Creek, and Danville to the west; and, to the east, by large expanses of grassland occurring west of State Highway 4, near the cities of Oakley and Brentwood. Public landholdings within this unit include two small Bureau of Land Management parcels; Mount Diablo State Park; Contra Costa Water District's Los Vaqueros Reservoir watershed; Contra Loma, Black Diamond Mines, Morgan Territory, and Round Valley Regional Parks; and other East Bay Regional Park District holdings. Other public lands include parcels owned by the Save Mount Diablo Foundation and the city of Walnut Creek. Two large, privately-owned gravel quarries also lie within this unit.



#### **Unit 5: Sunol-Cedar Mountain Unit**

Unit 5 consists of approximately 171,328 acres within the Sunol-Cedar Mountain unit and is the largest and the southernmost of the seven critical habitat units for the whipsnake. This parcel represents primary breeding, feeding, and sheltering habitat for the whipsnake. A majority of this unit occurs in Alameda County; however, parts of the parcel do lie in western San Joaquin and northern Santa Clara counties. The northern boundary of this unit runs parallel to State Highway 84 and Corral Hollow Road, south of the cities of Pleasanton and Livermore and Tesla Road. The southern boundary lies below Calaveras Reservoir and captures all of Wauhab and Cedar Ridges in Santa Clara County and stretches to the east, north of the Alameda-San Joaquin-Santa Clara-Stanislaus County intersection. The western boundary lies east of Interstate Highway 680 and the greater San Jose urban area. The eastern boundary lies within San Joaquin County a few miles east of the Alameda County line. This unit includes East Bay Regional Park District's Sunol, Mission Peak, Ohlone, Camp Ohlone, and Del Valle complex, and San Francisco Water District's Del Valle (San Antonio Reservoir) watershed. In addition, the Department of Energy's Lawrence Livermore National Laboratory Site 300 and California Department of Parks and Recreation's Carnegie Recreation Area lie within the unit.

#### **Unit 6: Caldecott Tunnel Unit**

Unit 6 encompasses approximately 5,445 acres within the Caldecott Tunnel unit. The parcel straddles Units 1 and 2 where State Highway 24 tunnels under the Berkeley Hills for approximately 4,000 feet. This unit represents a connector between Units 1 and 2 to allow individual animals to migrate between primary critical habitat units. This unit lies solely in Contra Costa County. All suitable Alameda whipsnake habitat in this unit is privately owned.

#### **Unit 7: Niles Canyon/Sunol Unit**

Unit 7 encompasses approximately 4,145 acres within the Niles Canyon/Sunol unit. The parcel lies between Units 3 and 5: south of State Highway 84 (Niles Canyon Road); north and west of Interstate 680; and east of the City of Fremont. Unit 7 is designed to be a connector between units 3 and 5, allowing migration of individual animals between primary critical habitat units. This unit lies solely within Alameda County and includes the East Bay Regional Park District's Vargus Plateau and San Francisco Water District watershed lands. Unit 7 contains some impediments to whipsnake movement between it and Unit 3. Specific barriers include Alameda Creek and railroad tracks that run along both sides of the creek, a 12- to 24-inch high concrete barrier that lies south of Niles Canyon Road and north of Alameda Creek, and heavy vehicular traffic along Niles Canyon Road.

## FRAMEWORK FOR ANALYSIS

## SECTION 3

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This section provides an overview of the framework for analysis, including a description of the methodology used to determine potential economic impacts from the proposed designation of critical habitat for the whipsnake. In addition, we describe the primary sources of information used to develop this report.

### **Framework for Analysis**

This economic analysis examines the impacts of restricting specific land uses or activities within areas designated as critical habitat. The analysis evaluates impacts in a "with" critical habitat designation versus a "without" critical habitat designation framework, measuring the net change in economic activity. The "without" critical habitat designation scenario, which represents the baseline for analysis, includes all protection already accorded to the whipsnake under state and Federal laws, such as the California Environmental Quality Act, National Environmental Policy Act, and the Clean Water Act. The ESA listing supplemented this protection via its listing provisions. The focus of this economic analysis is to determine the impacts on land use modifications and activities from the designation of critical habitat that are above and beyond the impacts due to existing required modifications under Federal, state, and local laws.

### **Steps to Identify Potential Impacts from Critical Habitat Designation**

Listed below are the four questions that were posed to identify economic impacts from the proposed critical habitat designation:

1. **What land uses and activities within the proposed critical habitat designation may be affected?** As noted above, potential impacts on critical habitat lands were identified through phone conversations with FWS staff, state and local land management agency staff, and private landowners. In addition to considering direct impacts on lands, the analysis considers the potential for indirect impacts that may affect lands (see Question 4).
2. **Does the land use or activity involve a "Federal nexus"?** Critical habitat designation modifications can only be imposed on land uses and activities undertaken by state and other governments and private parties when a "Federal nexus" exists (i.e., the activities or land uses of concern involve Federal permits, Federal funding, or other Federal action). Activities on the part of state and other governments as well as private entities that do not involve a Federal nexus are not restricted by critical habitat designation. For Federally-managed land, critical habitat designation may restrict land uses and other actions that could adversely modify habitat.

3. **Would the land use or activity face *additional* modifications or costs under the proposed critical habitat designation, above and beyond existing modifications or costs under the ESA listing of the whipsnake?** As noted above, the baseline for analysis includes all modifications on land use existing prior to the proposal of critical habitat, including listing modifications. Only impacts from modifications above and beyond this baseline are considered. Determinations of whether a land use or activity would face additional modifications or costs under the proposed critical habitat designation are based on discussions with FWS. Those land uses and activities that would be subject to additional modifications under the proposed critical habitat designation are evaluated to determine the potential national economic efficiency effects and regional economic impacts. While FWS anticipates recommending no further modifications to land use activities above those that may be required as a result of the listing of the whipsnake, it is possible that some land owners could incur additional costs resulting from reinitiating consultations with FWS to address whipsnake concerns.
4. **Would the land use or activity be subject to other indirect effects under the proposed critical habitat designation, based on perceptions of potential modifications rather than actual modifications on planned activity?** FWS has determined that the designation of critical habitat for the whipsnake places no further modifications on land uses and activities above and beyond those modifications extant under the ESA listing. Although actual modifications may be identical for lands within the boundaries of critical habitat and lands outside designated critical habitat, landowners and land managers may perceive or expect that additional modifications will arise from the delineation of critical habitat boundaries. In addition, landowners and managers with property within critical habitat boundaries may be uncertain about whether their property constitutes critical habitat. These perceptions may result in losses in economic value and may cause increased costs to property owners to mitigate these losses during the period following critical habitat designation, before markets incorporate information regarding actual modifications on activities. For example, the value of property within the extant boundary of the critical habitat designation may be lower (or higher) than properties outside the boundaries of the designation.

### **National and Regional Economic Effects**

The economic effects of designation of critical habitat consist of those factors affecting national income (i.e., national economic efficiency effects) and those economic and social impacts that are important on a local or regional level (i.e., regional economic impacts).

**National economic efficiency effects** are those consequences of critical habitat designation that represent a change in national income. Efficiency effects include, among other things, recreation (consumer surplus) values as well as management and construction costs in an area that would not be required without critical habitat designation. Impacts on national income may be positive (benefits) or negative (costs). For example, if road construction is prohibited in an area to avoid adverse modification, primitive recreation may be preserved in the area (a benefit) while development of motorized recreation is precluded (a cost).

**Regional economic effects** (or distributional effects) relate to equity and fairness considerations associated primarily with how income and wealth are divided among regions and groups. These effects are represented by changes in regional employment, household income, or state/local tax revenue that may have offsetting effects elsewhere in the economy. For example, if the designation of critical habitat results in less construction and development activity within critical habitat areas, this activity may increase in other nearby areas suitable for development. While this may have important

economic impacts on different local economies, it may have little or no effect on the regional or national economy.

### **Benefits of Critical Habitat Designation**

Critical habitat designation may also result in economic benefits by aiding the preservation or enhancement of non-recreational values provided directly by the species and indirectly by its habitat. Categories of potential benefits for the whipsnake include scenic beauty, biodiversity, ecosystem, and intrinsic (passive use) values. These benefits may result because society, species, and ecosystems are spared adverse and irreversible effects of habitat loss and species extinction. Quantitative or monetary values for these potential benefits of critical habitat designation, however, have not been estimated.

### **Information Sources**

The primary sources of information for this report were personal communications with FWS personnel, officials from state and local governments, and representatives of private entities. As of the date of this report, FWS had received a small number of written public comments on the proposed critical habitat designation. Several entities indicated a commitment to submitting comments later in the comment period. Public hearings on the proposed designation were in the process of being scheduled.

Because only some written comments and no hearing testimony were available, we relied primarily on telephone conversations with potentially affected stakeholders rather than on written comments or public hearing testimony. In April 2000, IEc conducted phone interviews with stakeholders to identify potentially affected current and planned activities and land uses and to obtain data on possible economic impacts.

## **IMPACTS OF CRITICAL HABITAT DESIGNATION ON LAND USE: FEDERAL, STATE, LOCAL, AND PRIVATE LANDS    SECTION 4**

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The proposed designation of critical habitat for the whipsnake includes Federal, state, local, and private lands. Critical habitat designation may modify land uses, activities, and other actions on Federally-managed land that threaten to adversely modify habitat. For activities and land uses on state, local, and private lands to be affected by critical habitat designation, a Federal nexus must exist (i.e., the activities or land uses involve a Federal permit, Federal funding, or require Federal actions). Activities on state and private lands that do not involve a Federal nexus are not affected by the designation of critical habitat.

In this chapter, we first discuss the types of impacts that theoretically could be incurred by Federal, state, local, and private land owners and managers as a result of the critical habitat designation for the whipsnake. Subsequently, we discuss actual activities in which these entities are involved, and evaluate whether they are likely to experience these impacts.

### **POTENTIAL IMPACTS OF CRITICAL HABITAT DESIGNATION**

As noted above, FWS staff has determined that, for the whipsnake critical habitat designation, there is no action that would result in an adverse modification determination without an accompanying jeopardy determination. In other words, critical habitat designation for the whipsnake is not expected to require modifications to land uses and activities above and beyond modifications that are already required under the ESA listing of the whipsnake. However, governments and private landowners may nonetheless incur direct costs resulting from the designation that are not attributable to the listing of the whipsnake as a threatened species. These costs include:

The value of time and other costs incurred in conducting Section 7 consultations beyond those associated with the listing of the whipsnake; and

Delays in implementing public and private development activities which result in losses to individuals and society.

Below we discuss each aspect in more detail.

### **Costs Associated with Conducting Section 7 Consultations on Critical Habitat**

Parties involved in Section 7 consultations include FWS and the Federal agency involved in the proposed activity. In cases where the consultation involves an activity proposed by a state or local government or a private entity (the "applicant"), the Federal agency with the nexus to the activity serves as the liaison with FWS.

To initiate a formal consultation, the relevant Federal agency submits to FWS a consultation request with an accompanying biological analysis of the effects of the proposed activity. This biological analysis may be prepared by the relevant Federal agency, the state, county, or municipal entity whose action requires a consultation, or an outside party hired by the agency or landowner. Once FWS determines that these documents contain sufficient detail to enable an FWS assessment, FWS has 135 days to consult with the relevant Federal agency and render its

biological opinion. During the consultation, parties discuss the extent of the impacts on critical habitat and propose potential mitigation strategies. Many applicants incur costs to prepare analyses as part of the consultation package. These costs vary greatly depending on the specifics of the project. In almost all cases, these costs are attributable to the fact that a species has been added to the list of threatened and endangered species rather than the designation of critical habitat.

FWS has recognized that there are approximately three different scenarios associated with the designation of critical habitat that could trigger additional consultation costs: (1) some consultations that have already been "completed" may need to be reinitiated to address critical habitat; (2) consultations taking place after critical habitat designation may take longer because critical habitat issues will need to be addressed; and (3) critical habitat designation may result in some new consultations taking place that otherwise would not had critical habitat not been designated (this would likely only happen in unoccupied habitat).

Note that this analysis of economic impacts recognizes a possible distinction between occupied and unoccupied lands within critical habitat. FWS expects that any potential economic impacts from the designation incremental to the listing will occur almost exclusively on *unoccupied* lands. The reasoning to support this view is that actions affecting occupied habitat would trigger the "may affect" threshold, thereby requiring consultation with the FWS, regardless of critical habitat designation. Therefore, any economic impacts affecting these lands are entirely attributable to the listing of the species rather than to critical habitat. In contrast, actions affecting unoccupied habitat without designated critical habitat would generally not trigger the "may affect" threshold. In these circumstances, consultations triggered by activities on unoccupied lands can be attributed to the critical habitat designation.

This analysis, however, also recognizes an alternative view expressed by some land owners. That is, ongoing or planned activities on occupied lands may trigger re-initiations of previous consultations conducted under the listing, or in select cases, new consultations that would not have taken place under the listing. While it is certainly more plausible that new consultations will be associated with activities on unoccupied lands, this analysis considers the possibility that some new consultations may be triggered by activities on occupied lands. No unoccupied lands have been designated for the whipsnake.

### **Cost Associated with Project Delays from Section 7 Consultations on Critical Habitat**

Both public and private entities may experience delays in projects and other activities due to critical habitat designation. Regardless of funding (i.e., private or public), projects and activities are generally undertaken only when the benefits exceed the costs, given an expected project schedule. If costs increase, benefits decrease, or the schedule is delayed, a project or activity may no longer have positive benefits, or it may be less attractive to the entity funding the project. For example, if a private entity undertaking a residential development must delay groundbreaking as result of an unresolved Section 7 consultation attributable to the listing of critical habitat, the developer may incur additional financing costs. Delays in public projects, such as construction of a new park, may impose costs in the form of lost recreational opportunities. The magnitude of these costs of delay will depend on the specific attributes of the project, and the seriousness of the delay. However, in the case of the whipsnake, it is likely any such delays will be attributable to the listing of the species and not the designation of critical habitat.<sup>2</sup>

### **IMPACTS OF CRITICAL HABITAT ON FEDERAL LAND**

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<sup>2</sup> Developers are aware of the potential impact of critical habitat designation on project scheduling. For example, in a statement to a local newspaper, one representative of a developers' association in Northern California indicated that, "Our builders do everything they can to comply with the Endangered Species Act. However,...the amount of additional paperwork [associated with the impact of ESA requirements], in many cases, stops or delays a project." (See *San Francisco Examiner* article by Jane Kay, "Feds may designate whipsnake habitat," March 9, 2000.)

The areas proposed for designation as critical habitat for the whipsnake include property held by the U.S. Department of the Interior's Bureau of Land Management and the U.S. Department of Energy's Lawrence Livermore National Laboratory in Livermore, CA. Of the total 406,708 acres of proposed critical habitat, less than one percent (1,805 acres) is held by these Federal agencies.

The Bureau of Land Management (BLM) owns land in Unit 4, the Mount Diablo and Black Hills unit. The BLM landholdings total approximately 80 acres. According to FWS staff, BLM currently undertakes few land management activities on the site, and therefore few effects from the proposed whipsnake critical habitat designation are anticipated.<sup>3</sup> At the time that this report was finalized, BLM had not submitted written comments on the proposed critical habitat designation for the whipsnake.

The Department of Energy's holdings consist of the Lawrence Livermore National Laboratory, a portion of which extends into the northern section of Unit 5. The specific component of the Laboratory that lies within Unit 5, known as Site 300, is used for munitions testing. At the time that this report was finalized, the Department of Energy had not submitted written comments on the proposed critical habitat designation within Site 300. The Sandia National Laboratory, operated for the Department of Energy, submitted written comments on the proposed critical habitat designation on April 13, 2000. The Sandia National Laboratory does not lie within the critical habitat designation for the whipsnake, and therefore does not believe that the designation will affect the laboratory. The Laboratory encouraged the FWS to maintain the current northern boundary of Unit 5 and to not expand it to include the Sandia site.

Section 7 of the ESA requires formal consultation for all Federal actions likely to have adverse effects on the species or its critical habitat. According to guidance from FWS staff, critical habitat designation will require no additional modifications on any of the identified Federal land uses and activities above and beyond modifications that already exist under the ESA listing of the whipsnake. Specifically, BLM does not conduct significant land management activities on the parcel in Unit 4 and, as a result, FWS believes that BLM management practices would be unlikely to pose a risk of adverse modification. With respect to DOE's Lawrence Livermore National Laboratory Site 300, FWS has indicated that the Site 300 land included in Unit 5 currently would not require project modifications above or beyond that already required by the ESA listing of the whipsnake. Exhibit 4-1 presents a summary of the effects of the proposed critical habitat designation for the whipsnake on affected Federal landholdings.

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<sup>3</sup> Personal communication with Jason Davis, Fish and Wildlife Biologist, U.S. FWS, April 21, 2000.

**Exhibit 4-1**

**FEDERAL LAND:  
SUMMARY OF IMPACTS UNDER THE PROPOSED CRITICAL HABITAT DESIGNATION  
FOR THE ALAMEDA WHIPSNAKE**

<b>Description of Current and Planned Land Uses or Activities That May Have an Impact on Suitable or Occupied Habitat</b>	<b>Critical Habitat Unit(s) Potentially Affected</b>	<b>Possible Federal Nexus</b>	<b>Possible Modifications Under the ESA Listing?*</b>	<b>Additional Modifications Under Critical Habitat Designation?*</b>	<b>Estimated Impacts From Critical Habitat Designation Only?</b>
<b>None</b> (Bureau of Land Management, (Dept. of Interior))	4	Potential habitat destruction	Possibly	No	None
<b>Munitions testing</b> (Lawrence Livermore National Laboratory, Dept. of Energy)	5	Potential habitat destruction	Possibly	No	None

Possible modifications are based on guidance from FWS staff in Sacramento, CA office.

Sources: (1) Jason Davis, Biologist, FWS, personal communication, April 21, 2000.

### **IMPACTS OF CRITICAL HABITAT ON LOCAL AND STATE LAND**

State and local government bodies own or manage 155,981 acres of the proposed critical habitat area, constituting 38 percent of the total acreage. Uses of state and local lands can only be affected by designation of critical habitat when activities on those lands involve a Federal nexus.

At the time that this report was finalized, FWS had not received written comments from local and state land managers on the effect on their lands of the proposed critical habitat designation for the whipsnake. Therefore, the discussion below reflects personal communications with officials whom FWS staff knew to have specific concerns. FWS receipt of written comments from the organizations discussed below will enable the agency to respond more accurately to specific concerns.

#### **East Bay Regional Parks District**

The East Bay Regional Park District owns significant acreage throughout the identified critical habitat area.<sup>4</sup> The District estimates that between 75 and 80 percent of the 91,000 acres that the District manages, or between 68,250 and 72,800 acres, lie within the boundaries of proposed critical habitat units for the whipsnake. The list below identifies major District landholdings in each proposed critical habitat unit:<sup>5</sup>

Unit 1 contains the Tilden, Wildcat, and Briones Regional Parks;

Unit 2 includes the Redwood and Anthony Chabot Regional Parks and the Las Trampas Regional Wilderness;

<sup>4</sup> Comments reported here were obtained through personal communications with Joseph DiDonato, East Bay Regional Parks District, April 24, 2000, and other sources as noted.

<sup>5</sup> Information in this list obtained from *Proposed Determination of Critical Habitat for the Alameda Whipsnake*, March 8, 2000 (65 FR 12155).



Unit 3 contains the Garin, Dry Creek, and Pleasanton Ridge Regional Parks and other District holdings;

Unit 4 contains Contra Loma, Black Diamond Mines, Morgan Territory, and Round Valley Regional Parks as well as other District holdings;

Unit 5 contains the Sunol, Mission Peak, Ohlone, Camp Ohlone, and Del Valle complex of Regional Parks; and

Unit 7 contains the District's Vargus Plateau.

Below are key park management concerns articulated by District representatives.

### **Fire/Fuel Management**

Historically, the East Bay area has experienced brush fires during the dry season. Because many of the parklands managed by the East Bay Regional Park District are located in urban interface areas, the District is concerned that a fire originating on heavily-vegetated parkland could migrate to homes and businesses located on the fringes of the parks. As a result, fuel management represents one of the District's primary park management concerns, particularly on western park borders.

The District's active fuel management program generally involves minimizing vegetative cover in a 300 to 500-foot boundary zone between the park and urban areas.<sup>6</sup> In this fuel management zone, the District employs crews to hand-cut brush and thin vegetative cover to create a defensible area in the event of a fire. As a secondary strategy, the District also grazes herds of cattle and sheep on these areas to reduce vegetation. In areas farther from dense urban development, the District relies primarily on grazing to keep down vegetative growth.

The District's fire management program relies in part on funding from the Federal Emergency Management Agency (FEMA). As a result, the District's fire management activities on proposed critical habitat areas are subject to a clear Federal nexus. While the District anticipates that FWS will recognize the necessity of fuel management practices, the District envisions that Section 7 consultations would enable FWS to require the use of fuel management strategies that differ from existing practices, to better preserve whipsnake habitat. The District is concerned that these alternative mitigation strategies may be too costly or otherwise untenable for the District, and may have unintended side effects. For example, a reduction in allowable grazing, a low-cost fuel management strategy, would force the District to rely on more costly hand-clearing and may adversely affect the District's wildflower promotion plan and other park enhancements. In addition, the District is concerned that undertaking Section 7 consultations and delays in implementing these strategies may increase management costs.

FWS is currently in informal consultation on the District's FEMA funded fire management program and does not anticipate that the designation of critical habitat for the whipsnake will result in any modifications to proposed or existing fire management activities above and beyond that which is required under the listing of the whipsnake.

### **Recreation**

The East Bay Regional Parks District maintains over 30 parks in the proposed critical habitat area for the whipsnake. The parks offer diverse recreational activities, including hiking, fishing, and swimming. Ongoing park management includes creating new trails to connect parks and sites within parks, as well as maintaining existing

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<sup>6</sup> A recent newspaper article indicates that the East Bay Regional Parks District has proposed a 15-mile long clear-cut from Wildcat Canyon in Richmond, across the Caldecott Tunnel (Rt. 24), and across the Oakland Hills. (See: Kay, Jane, "Feds may designate whipsnake habitat", *San Francisco Examiner*, March 9, 2000).

sites. The District envisions that some planned trails may cross proposed whipsnake habitat. A Federal nexus may emerge if the District requires CWA Section 404 permits to disturb wetlands during trail creation. The District is concerned that FWS may look unfavorably on allowing trail creation in proposed critical habitat areas. As a result, the District may have to purchase additional, non-critical habitat land on which to build these trails, at considerable expense, and may incur expenses associated with construction delays.

FWS does not anticipate that the designation of critical habitat for the whipsnake will result in any modifications to proposed or existing trails or other recreational activities above and beyond that which is required under the listing of the whipsnake.

### **California State Department of Parks and Recreation**

The California State Department of Parks and Recreation operates the Carnegie Recreation Area in Unit 5 and the Mount Diablo State Park in Unit 4.

For some time, park managers at Mount Diablo State Park have been collaborating with FWS to determine whether proposed park management activities may jeopardize the whipsnake population living on the parkland. Currently, implementation of a prescribed burning program for fuel management and construction of a new observatory are on hold while FWS and park officials determine whether the effects of these activities constitute a taking of whipsnakes under the ESA. In light of the ongoing relationship with FWS regarding the whipsnake, park officials believe that inclusion of the parkland in the critical habitat designation for the whipsnake will have no effect beyond the effects of listing the whipsnake as a threatened species.<sup>7</sup> In addition, park officials envision no Federal nexus through which additional Section 7 consultations pursuant to critical habitat designation would be indicated.

FWS is under the understanding that the building of the observatory has gone forward and anticipates that the Department's habitat conservation plan will adequately address the fuels management program.

The Carnegie Recreation Area is a recreational vehicle park run by the State of California. Carnegie is actively developing an HCP in conjunction with local governments in response to a directive from the State, although the park does not intend to submit it to FWS for approval in the near future. The park has worked with FWS in the past regarding takings issues. The park does not receive Federal funding and does not envision applying for permits, and as a result does not envision significant impacts associated with critical habitat designation for the whipsnake.<sup>8</sup>

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<sup>7</sup> Personal communication with Larry Ferry, Mount Diablo State Park, April 26, 2000.

<sup>8</sup> Personal Communication with Dan Dungee, Carnegie State Recreation Area, April 27, 2000.

### **East Bay Municipal Utilities District**

The East Bay Municipal Utilities District (EBMUD) is a publicly owned water district. The District provides water to 1.2 million customers and wastewater treatment for 600,000 customers residing in portions of Alameda and Contra Costa counties. EBMUD owns approximately 28,000 acres in the East Bay watershed, including Lafayette Reservoir, Lake Chabot, and San Pablo Reservoir.

The Utilities District's primary concerns with the proposed designation of critical habitat for the whipsnake involve its effect on EBMUD's fire management policies in the Lafayette Reservoir area.<sup>9</sup> Row houses and other dwellings ring the watershed. Therefore, EBMUD takes precautions to minimize the chance of fires originating on watershed lands and posing a risk to populated areas. EBMUD maintains a system of cleared areas within the watershed to reduce available fuel as well as a network of fire roads that are cleared manually and grazed. Both the cleared areas and the roads have existed for many years.

FWS excluded, in the designation of critical habitat for the whipsnake, routine clearing of fuel breaks around urban boundaries that were constructed before the listing of the whipsnake on December 5, 1997.

Currently, no Federal nexus exists that would invite a Section 7 consultation. However, EBMUD is developing a Habitat Conservation Plan (HCP) that it plans to submit to FWS for approval. As part of this plan, EBMUD will need to address the impact its activities will have on the whipsnake because it is a listed species. While the District is concerned about the implications of the critical habitat designation for the HCP under development, especially with regard to their ability to use the existing fire protection strategies envisioned in the draft HCP.

FWS believes that it is unlikely that critical habitat designation will require any further modifications to their proposed activities beyond those required due to the listing of the whipsnake as a Federally protected species.

### **Contra Costa Water District**

Unit 4 contains the Contra Costa Water District's Los Vaqueros Reservoir watershed; however, the District does not anticipate significant effects from the designation of critical habitat for the whipsnake. During the last 10 years, the Contra Costa Water District has acquired 18,500 acres in the East Bay region to increase water storage capacity and improve watershed management. This effort has required the District to procure several Federal and state land use permits. In addition, the District has developed a fire management strategy for the acquired parcel. During Section 7 consultations associated with those permits and fire management strategies, the District has worked closely with FWS to address whipsnake takings issues, and has developed a wildlife management plan to encourage whipsnake habitat preservation. As a result, the District does not anticipate changes to its management activities associated with critical habitat designation for the whipsnake (and does not anticipate submitting written comments to FWS on the designation).<sup>10</sup>

### **San Francisco Public Utilities Commission**

Units 5 and 7 contain land held by the San Francisco Water District, including the Del Valle (San Antonio Reservoir) watershed. Telephone contacts with the San Francisco Water District indicate that the District is

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<sup>9</sup> At the time this report was finalized, FWS had not received written comments from the Utilities District; comments reported here were obtained through personal communication with Roger Hartwell, Biologist, East Bay Municipal Utilities District, April 24, 2000.

<sup>10</sup> Personal communication with Ed Stewart, Senior Watershed Resources Specialist, Contra Costa Water District, April 25, 2000.

evaluating whether the proposed critical habitat designation may affect the District's activities on these lands. Once the District has completed its evaluation, it will determine whether impacts on the District associated with the proposed designation warrant submission of comments to FWS on the designation.<sup>11</sup>

Exhibit 4-2 summarizes the effects of the critical habitat designation for the whipsnake on state and local landholdings.

## IMPACTS OF CRITICAL HABITAT ON PRIVATE LAND

Private landholders own 248,922 acres, or 61 percent, of the 406,708 acres of land proposed as critical habitat for the whipsnake. For private land uses or activities to be affected by the proposed designation of critical habitat, a Federal nexus must exist (i.e., land uses or activities that involve Federal permits, Federal funding, or other Federal actions). For example, private developers may require a Section 404 permit issued by the U.S. Army Corps of Engineers if development affects wetland areas. Activities on private lands that do not involve a Federal nexus are not affected by the designation of critical habitat. Private lands within the critical habitat designation boundaries that do not contain primary constituent elements (e.g., developed parcels) are not considered critical habitat areas.

### Current and Proposed Land Development

Although FWS had not received written comments from the City of Dublin, CA at the time of this report, the city recently enacted a resolution to submit a formal comment on the proposed

<b>Exhibit 4-2</b>				
<b>STATE AND COUNTY LANDS: SUMMARY OF IMPACTS UNDER THE PROPOSED CRITICAL HABITAT DESIGNATION FOR THE ALAMEDA WHIPSNAKE</b>				
<b>Description of Current and Planned Land Uses or Activities That May Have an Impact on Suitable or Occupied Habitat</b>	<b>Possible Federal Nexus</b>	<b>Possible Modifications Under the ESA Listing?</b>	<b>Additional Modifications Under the Proposed Critical Habitat Designation?</b>	<b>Estimate Impacts From Critical Habitat Designation Only?</b>
<b>Fire prevention</b>	FEMA funding, HCP	Possibly	No	Potential additional consultations; project delays
<b>Recreation</b>	Section 404 permit	Possibly	No	Potential additional consultations; project delays

\* Possible modifications are based on guidance from FWS staff in Sacramento, CA office.

Sources: Personal communications with (1) Joseph DiDonato, East Bay Regional Parks District, April 24, 2000; (2) Roger Hartwell, Biologist, East Bay Municipal Utilities District, April 24, 2000; (3) Paula Kehoe, Public Affairs Office, San Francisco Public Utilities Commission, April 25, 2000.

<sup>11</sup> Personal communication with Paula Kehoe, Public Affairs Office, San Francisco Public Utilities Commission, April 25, 2000.

critical habitat designation for the whipsnake.<sup>12</sup> In comments to local media, the city has indicated concern that a proposed development in the Dublin area, known as Schaefer Ranch, may be affected by the proposed designation.<sup>13</sup> This planned mixed-use development envisions 466 dwelling units integrated with commercial space on a 500-acre parcel. City officials contend that the whipsnake is not present in the Schaefer Ranch area, and therefore that region should not be included in the delineated critical habitat area.<sup>14</sup>

A Federal nexus to the Schaefer Ranch project exists because developers submitted a CWA Section 404 permit application for stream disturbance to the Army Corps of Engineers. The city believes that FWS consultation with the Corps regarding this permit may result in FWS requiring changes to or cancellation of the development plan. As a result of these changes, the city believes that it may lose up to \$1 million in tax revenues resulting from precluded development opportunities stemming from the critical habitat designation for the whipsnake.<sup>15</sup> In addition, the city estimates losses from foregone regional spending if planned new residents and businesses do not locate in the area.

Although FWS must evaluate written comments from the city before making a final determination, FWS officials believe that concerns they may have about proposed development projects at Schaefer Ranch, as well as any modifications they may suggest, would be driven by the presence of the red-legged frog, which is another Federally protected species occurring in the area. Furthermore, any modifications to proposed projects would most likely be attributable to the listing of this species, as opposed to the designation of critical habitat for the whipsnake in the area.

While FWS had not received comments from any real estate developers at the time this report was finalized, local newspaper articles suggest that other housing developments are planned on land included in the proposed critical habitat designation. These include:<sup>16</sup>

Hayward Hills: 650 houses and an 18-hole golf course;

Oakland Hills/Anthony Chabot Park to Las Trampas Ridge: 225 houses, an 18-hole golf course, and a convention center on 978 acres;

Sobranite Ridge/Tilden and Wildcat Regional Parks: 800 houses (known as Franklin Canyon); and

Mount Diablo/Black Hills: 5,200 houses on 1,000-acre Clayton Ranch and 1,200-acre Cowell Ranch.

As noted above, if the costs of these projects increase, benefits decrease, or the schedule is delayed, a project or activity may no longer have positive benefits, or may be less attractive to the entity funding the project. In theory, developers involved in these projects could incur losses if Section 7 consultations alter key project parameters. However, it is most likely that any modifications to proposed projects would be attributable to the listing of the whipsnake (and the collateral prohibition on takings) than it would to the designation of critical habitat.

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<sup>12</sup> At the time of this report was completed, the City of Dublin was in the process of developing and submitting comments on the proposed designation to FWS.

<sup>13</sup> Personal communication with Dennis Carrington, Senior City Planner, Dublin, CA, (April 24, 2000).

<sup>14</sup> Shire, Kara, "Dublin opposes critical habitat for 'absent' whipsnake ," *The Hayward Daily Review*, (April 20, 2000 ).

<sup>15</sup> Personal communication with Jason Davis, Fish and Wildlife Biologist, U.S. FWS (April 21, 2000).

<sup>16</sup> Kay, Jane, "Feds may designate whipsnake habitat," *San Francisco Examiner*, March 9, 2000.

Some existing private landowners whose land lies in the proposed critical habitat units for the whipsnake commented that their land is in fact not occupied by the whipsnake.<sup>17</sup> In the proposed rule, FWS noted that land containing man-made structures, such as roads and buildings, or lacking primary constituent elements of whipsnake habitat would not be considered critical habitat. Based on best available scientific information, FWS does assume that all other land within the designated units is occupied by the whipsnake.<sup>18</sup> Therefore, any action that would result in an adverse modification ruling would also activate an accompanying jeopardy ruling. In other words, critical habitat designation for the whipsnake is not expected to alter land use activities above and beyond impacts that may result because the whipsnake is a Federally protected species. Because FWS is not designating any unoccupied habitat as critical habitat for the whipsnake, it is not likely that private parties would experience a significant increase in consultations due to the designation of critical habitat because such consultations would already be necessary due to the presence of a Federally listed species on their property.

### **Agricultural Land**

At the time that this report was finalized, FWS had received a request for a hearing and an extension of the comment period for the proposed critical habitat designation from the Alameda County Farm Bureau and from two farmers. Telephone conversations with the Farm Bureau indicate that board members will attend the requested public meeting and finalize their opinions at that time.<sup>19</sup>

Exhibit 4-3 presents a summary of the potential impacts on private lands of the proposed critical habitat designation for the whipsnake.

<b>Exhibit 4-3</b>				
<b>PRIVATELY OWNED LANDS: SUMMARY OF IMPACTS UNDER THE PROPOSED CRITICAL HABITAT DESIGNATION FOR THE ALAMEDA WHIPSNAKE</b>				
<b>Description of Current and Planned Land Uses or Activities That May Have an Impact on Habitat</b>	<b>Possible Federal Nexus</b>	<b>Possible Modifications Under the ESA Listing?</b>	<b>Additional Modifications Under the Proposed Critical Habitat Designation?</b>	<b>Estimate Impacts From Critical Habitat Designation Only?</b>
<b>Current and planned land development</b>	Section 404 permit	Possibly	No	Potential additional consultations; project delays

<sup>17</sup> As noted in Section 1, FWS defines occupied land as areas that contain the physical or biological features that are essential to the conservation of the species and that may require special management considerations or protection. Not all occupied land, however, may be designated as critical habitat.

<sup>18</sup> See *Proposed Determination of Critical Habitat for the Alameda Whipsnake*, 65 FR 12159.

<sup>19</sup> Personal communication with Sue Russo, Manager, Alameda County Farm Bureau, April 25, 2000.

<b>Farming</b>	Undetermined - possible federal farm subsidies or insurance	Possibly	No	Potential additional consultations; project delays
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\* Possible modifications are based on guidance from FWS staff in Sacramento, CA office.

Sources: (1) Public comments received in response to the proposed critical habitat designation for the whipsnake;

(2) Personal communication with Dennis Carrington, Senior City Planner, Dublin, CA, April 24, 2000

## OTHER POTENTIAL IMPACTS

Some Federal activities have been identified as potential concerns, but are not addressed in the summaries above. Other Federal activities constituting a nexus include:

Bureau of Land Management regulation of grazing, mining, and recreational activities;

Sale, exchange, or lease of lands by the Bureau of Land Management and the Department of Energy;

Regulation of water flows, water delivery, damming, diversion, and channelization by the Bureau of Reclamation and U.S. Army Corps of Engineers;

Funding and regulation of new road construction by the Federal Highway Administration;

Funding of low-interest loans to facilitate the construction of low-income housing by the U.S. Department of Housing and Urban Development;

Environmental Protection Agency air and water quality standards.

Although FWS currently is not aware of these activities taking place on land proposed as critical habitat for the whipsnake, they are provided here to illustrate the range of activities that may constitute a potential Federal nexus.

## IMPACTS DUE TO UNCERTAINTY AND PUBLIC PERCEPTION

## SECTION 5

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As noted throughout this report, FWS guidance suggests that no additional project modifications associated with land use activities are expected above and beyond those resulting from the ESA listing of the whipsnake. Because of the presence of the whipsnake, any modifications to land use will most likely be similar for similar types of activities on lands within the critical habitat designation as for land outside of the designation. Lands within the critical habitat units may be subject to two types of *indirect* economic impacts. First, uncertainty surrounding the definition of critical habitat could prompt some landowners or managers to undertake steps to reduce that uncertainty, thereby incurring transaction costs. Second, while FWS believes that, in most cases, the critical habitat designation for the whipsnake will require no further changes to proposed or existing land use activities beyond those experienced due to the listing, the public may *perceive* the risk of additional modifications. This perception may result in real reductions in land values and real estate transactions. Below, we describe each of these indirect economic effects in more detail.

### **Costs Associated with Uncertainty of Critical Habitat Impacts**

The proposed rule designating critical habitat for the whipsnake excludes certain lands within the borders of the critical habitat units. Specifically, those parcels featuring existing structures and/or lacking primary constituent elements are not subject to the requirements associated with designation.

Some land owners may elect to retain or consult counsel, surveyors, and other specialists to determine whether specific parcels lie within critical habitat boundaries, and/or whether the primary constituent elements are present on parcels. Thus, uncertainty over the critical habitat status of lands has the potential to create real economic losses as land owners incur costs to reduce and/or mitigate the effects of this uncertainty.

### **Costs Associated with Public Perception of Critical Habitat Impacts**

Public comments suggest the perception of additional required modifications due to critical habitat designation, even when actual modifications are not imposed. This perception may result in real reductions in land values and real estate transactions. Over time, as the public awareness grows that critical habitat will not result in additional modifications, the impact of designation of critical habitat on property markets can be expected to decrease to reflect the level of impacts associated with listing modifications and the potential costs of additional consultations associated with designation of critical habitat, as discussed in Section 4 of this report.



To explain property market impacts due to public perception of the critical habitat designation, it is necessary to examine key events associated with the listing and the critical habitat designation for the whipsnake: (1) ESA listing; (2) proposal of critical habitat. Exhibit 5-1 illustrates the possible impacts on property markets resulting from each of these events.

1. **ESA listing** — The initial impact of the whipsnake listing on property markets may have been limited because FWS guidance, in the form of a map indicating which areas were subject to listing modifications, was unavailable. The public also may not have been fully aware of how listing modifications would affect land uses and activities. Therefore, it is likely that the potential effects of the listing on property markets were only partially felt at the time of the listing (December 5, 1997).
2. **Proposed Critical Habitat** — The proposal of critical habitat may cause two types of effects that would result in impacts to property markets:

**Greater Public Awareness of Areas Subject to Modifications:** The proposal of critical habitat included the issuance of maps designating seven units of land as potential critical habitat areas. Although all of these units, as well as other areas, were already subject to listing modifications, no map was issued with the listing. Therefore, the critical habitat designation maps likely increase public awareness of areas subject to modifications, thereby increasing listing impacts that may not have been fully felt at the time of the whipsnake listing.

**Public Perception that Critical Habitat Designation Will Result in Additional Modifications:** Public perception that critical habitat designation might involve additional modifications, above and beyond existing modifications under the ESA listing, also may negatively affect property markets. This public perception may result in economic impacts to property markets above and beyond those caused by listing modifications. Over time, as public awareness grows that critical habitat designation will not result in additional modifications, the impact of critical habitat designation on property markets can be expected to subside. Those impacts associated with listing modifications will remain, as will the effects from the costs of any additional consultations associated with critical habitat designation. The economic impacts due to public perception of critical habitat designation are illustrated by Exhibit 5-1. The scale of these effects depends on how great the initial impacts of public perception are on property markets and the length of time it takes for the perceptions to diminish as public awareness grows that designation of critical habitat will not result in additional modifications. Furthermore, effects are only realized to the extent that property transactions occur during this period of uncertainty.

**Illustration of How Public Perception Can Result in Real Economic Impacts**

The following story was provided as public comment on the proposed critical habitat designation for the cactus ferruginous pygmy-owl in southeastern Arizona. This comment was provided by David T. Cox on February 26, 1999. The story illustrates how public perception that critical habitat designation will result in additional modifications, above and beyond existing modifications required by the ESA listing, can have real economic impacts.

"On November 16, 1998, we successfully negotiated and entered into a written contract for sale of the 40 acres to an entity which intended to develop and market finished lots, for a total cash sales price of \$800,000 (\$5,000 per lot) to close February 15, 1999. ...Escrow was opened at Lawyers Title, and \$25,000 deposited by the buyer as earnest money. The buyer retained a 30-day period, through December 17, 1998, to investigate title to the property and feasibility of development of the 40 acres before the sale contract became non-cancelable.

The week of November 23, 1998, the Federal District Court in Tucson ordered the Service to propose critical habitat within 30 days. In response to this 'front page news,' the buyer for the 40 acres requested, and we agreed, to extend its 30-day window to investigate feasibility of development to January 15, 1999, to permit the buyer to review the Service's proposal. The proposed rule was issued December 22, 1998, which would designate the 40 acres as critical habitat. On January 4, 1999, we received notice from the buyer and Escrow Agent informing us that the escrow and contract were canceled. The buyer informed us it canceled because of the proposed pygmy owl critical habitat designation. The buyer has stated it has a continuing interest in acquiring the 40 acres if the impediment to developing the 160 lots, created by the pygmy owl habitat designation, can be quickly eliminated."

Note: Mr. Cox was advised by FWS that, due to the presence of pygmy owls on or near his property, and the presence of suitable habitat on the property, even without any critical habitat designation, he or his buyer would still likely need to go through ESA compliance procedures to obtain the necessary permits for low-density housing development to proceed on the property. FWS offered their assistance in obtaining the necessary permits.

Source: David T. Cox, "Comments on Proposed Determination of Critical Habitat for Pygmy Owl," Tortolita Property Investors, February 26, 1999.

*Draft -May 26, 2000*

The Regulatory Flexibility Act (as amended by the Small Business Regulatory Enforcement Fairness Act (SBREFA) of 1996) states that whenever a Federal agency is required to publish a notice of rulemaking for any proposed or final rule, it must prepare and make available for public comment a regulatory flexibility analysis that describes the effect of the rule on small entities (i.e., small businesses, small organizations, and small government jurisdictions).<sup>1</sup> However, no regulatory flexibility analysis is required if the head of an agency certifies the rule will not have a significant economic impact on a substantial number of small entities. SBREFA amended the Regulatory Flexibility Act to require Federal agencies to provide a statement of the factual basis for certifying that a rule will not have a significant economic impact on a substantial number of small entities. This section addresses the potential impacts to small entities and communities located within the proposed critical habitat designation.

This rule will not have a significant economic impact on a substantial number of small entities because it imposes very few, if any, additional modifications on land use activities beyond those that may be required as a result of the listing of the whipsnake. Because the whipsnake is a Federally protected species, landowners are prohibited from taking the species, which is defined under the Act to include activities that would harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. As a result, any future consultations with FWS are likely address activities resulting in an incidental take of the whipsnake. Therefore, proposed modifications to such activities recommended by FWS would be attributable to the prohibition against take and not due to the presence of critical habitat.

It is possible that some small entities and communities may incur direct costs resulting from the designation of critical habitat above and beyond those attributable to the listing of the whipsnake as a threatened species. Such costs may include: (1) the value of time spent in conducting Section 7 consultations beyond those associated with the listing of the whipsnake, and (2) losses to individuals and society associated with delays in implementing public and private development projects. In the first instance, FWS believes that such additional consultations would be unlikely to occur because FWS is not designating any critical habitat that is currently unoccupied by the whipsnake. While some small businesses and communities could suffer some losses under the second scenario, this impact is unlikely to cause a significant impact on a substantial number of small entities because entities would only be affected to the extent that: (1) property transactions take place during this time of uncertainty; and (2) that the price of such property undergoing a transaction reflects such a concern by the buyer.

According to official Bureau of Indian Affairs land ownership maps, as created for the BIA by the Geographic Data Service Center, no Native American lands lie within the borders of the designated critical habitat area.<sup>2</sup>

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<sup>1</sup> 5 U.S.C. 601 et seq.

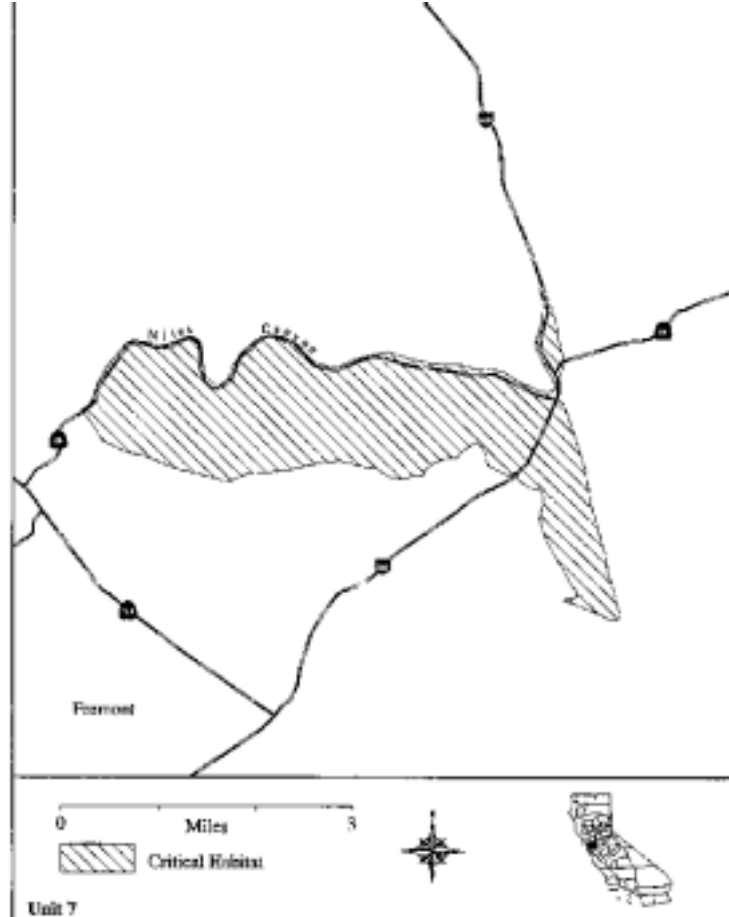
<sup>2</sup> Data taken from BIA land ownership maps, available at <https://www.e-lis.bia.gov>

## **CRITICAL HABITAT UNIT MAPS**

## **APPENDIX A**

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The following maps were provided by FWS staff. They show each of the seven units proposed for critical habitat designation for the whipsnake.



Map of Unit 7, Alameda County,  
California From 2000 California

Map of Unit 7, Alameda County,  
California From 2000 California

